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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,554	12/20/2001	Linda J. Rankin	10559-637001/P12341	4687

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EXAMINER

AUVE, GLENN ALLEN

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/029,554	Applicant(s) RANKIN ET AL.	
	Examiner Glenn A. Auve	Art Unit 2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10-24 and 28-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is rejected based on lack of positive antecedent basis of "the coherency" and "the cache memory" on line 2.

Claim 11 is rejected because it depends on claim 10.

Claim 11 is rejected based on lack of positive antecedent basis of "the caching of system memory" on line 3; and "the content of the system memory they have cached" on line 6.

Claim 12 is rejected because it is a process claim but it is claiming an apparatus of "a multi-port switch containing ports" on line 3. This renders the claim indefinite because it is not clear whether applicant is claiming a process or an apparatus.

Claims 13-19 are rejected because they depend on claim 12.

Claim 19 is also rejected based on lack of positive antecedent basis of "the nodes requiring a cache update" on lines 5-6.

Claim 20 is rejected because it is a process claim but it is claiming an apparatus of "a multi-port switch containing a plurality of ports" on line 3. This renders the claim indefinite because it is not clear whether applicant is claiming a process or an apparatus.

Claim 21 is rejected because it depends on claim 20.

Claim 22 is rejected based on lack of positive antecedent basis of "the processor" on line

- 3.

Claims 23 and 24 are rejected because they depend on claim 22.

Claim 28 is rejected because it is an apparatus claim but it is claiming several process limitations. This renders the claim indefinite because it is not clear whether applicant is claiming a process or an apparatus.

Claims 29 and 30 are rejected because they depend on claim 28.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Sun Microsystems, Inc. (Sun), European Patent Application EP 0 848 327 A2.

As per claim 1, Sun shows incorporating a multi-port switch into a multi-node computer system (at least in figs. 3-8 and throughout pages 2-3); and assigning at least a first port of the multi-port switch to a first domain of the nodes (page 2, lines 25-58). Sun shows all of the steps recited in claim 1.

As for claim 2, the argument for claim 1 applies. Sun also shows delivering transactions that are received by the multi-port switch and are identified as associated with the first domain, to the at least a first or more ports assigned to the first domain (pages 2-3 and 5). Sun shows all of the steps recited in claim 2.

As for claim 3, the argument for claim 1 applies. Sun also shows connecting nodes associated with the first domain to the at least a first port assigned to the first domain (pages. 2-3). Sun shows all of the steps recited in claim 3.

As for claim 4, the argument for claim 1 applies. Sun also shows assigning at least a second port of the multi-port switch to a second domain (also in pages 2-3 and 5, there can be many domains which operate independently). Sun shows all of the steps recited in claim 4.

As for claim 5, the argument for claim 4 applies. Sun also shows delivering transactions, which are received by the multi-port switch and are identified as associated with the second domain, to the at least a second or more ports assigned to the second domain (pages. 2-3 and 5). Sun shows all of the steps recited in claim 5.

As for claim 6, the argument for claim 4 applies. Sun also shows connecting nodes associated with the second domain to ports assigned to that second domain (pages 2-3). Sun shows all of the steps recited in claim 6.

As for claim 7, the argument for claim 1 applies. Sun also shows assigning at least a third port of the multi-port switch to a third domain; and connecting nodes associated with the third domain to ports assigned to that third domain (also in pages 2-3 and 5, there can be many domains which operate independently). Sun shows all of the steps recited in claim 7.

As for claim 8, the argument for claim 7 applies. Sun also shows delivering transactions, which are received by the multi-port switch and specify the third domain, to the at least a third or more ports assigned to the third domain (pages 2-3 and 5). Sun shows all of the steps recited in claim 8.

As for claim 9, the argument for claim 2 applies. Sun also shows monitoring broadcast transactions generated for the first domain; and transmitting these broadcast transactions to only the at least a first or more ports assigned to the first domain (pages 2-3 and 5, transactions within a domain or cluster are sent to the ports associates with that domain or cluster). Sun shows all of the steps recited in claim 9.

As for claim 10, the argument for claim 3 applies. Sun also shows maintaining the coherency of the cache memory for the first domain (page 3, lines 35-50). Sun shows all of the steps recited in claim 10.

As for claim 11, the argument for claim 10 applies. Sun also shows that said maintaining the coherency includes: monitoring the caching of system memory by the nodes associated with the first domain; and informing the nodes requiring a cache update that the content of the system memory they have cached has changed (page 3 as noted above and also inherent in cache coherency). Sun shows all of the steps recited in claim 11.

Although claim 12 has been rejected based on indefiniteness under 35 USC § 112, it is still being rejected based on the prior art under the assumption that it is a process claim and that there is a process step such as "providing a multiport switch containing ports" incorporated into the claim.

As per claim 12, Sun shows providing a multi-port switch containing ports; and a first domain port assignment process for assigning at least a first port of said multi-port switch to a first domain (figs. 3-8 and pages 2-3 as noted above). Sun shows all of the elements recited in claim 12.

As for claim 13, the argument for claim 12 applies. Sun also shows a first domain transaction routing process for routing transactions, which are received by said multi-port switch and specify the first domain, to one or more ports assigned to the first domain (pp.2-3). Sun shows all of the elements recited in claim 13.

As for claim 14, the argument for claim 12 applies. Sun also shows a second domain port assignment process for assigning at least a second port of said multi-port switch to a second domain (pp.2-3 and 5 as noted above). Sun shows all of the elements recited in claim 14.

As for claim 15, the argument for claim 14 applies. Sun also shows a second domain transaction routing process for routing transactions, which are received by the multi-port switch and specify the second domain, to one or more ports assigned to the second domain (pp.2-3 and 5). Sun shows all of the elements recited in claim 15.

As for claim 16, the argument for claim 14 applies. Sun also shows a third domain port assignment process for assigning at least a third port of the multi-port switch to a third domain (pp.2-3 and 5, as noted above there can be many domains set up by the system). Sun shows all of the elements recited in claim 16.

As for claim 17, the argument for claim 16 applies. Sun also shows a third domain transaction routing process for routing transactions, which are received by the multi-port switch and specify the third domain, to one or more ports assigned to the third domain (pp.2-3 and 5). Sun shows all of the elements recited in claim 17.

As for claim 18, the argument for claim 13 applies. Sun also shows a broadcast partitioning process for monitoring broadcast transactions generated for the first domain and transmitting these broadcast transactions to only the one or more ports assigned to the first domain (pages 2-3 and 5, transactions within a domain or cluster are sent to the ports associates with that domain or cluster). Sun shows all of the elements recited in claim 18.

As for claim 19, the argument for claim 13 applies. Sun also shows a domain cache coherency process for monitoring the caching of system memory by the nodes associated with the first domain, and informing the nodes requiring a cache update that the content of the system memory they have cached has changed (page 3). Sun shows all of the elements recited in claim 19.

Although claim 20 has been rejected based on indefiniteness under 35 USC § 112, it is still being rejected based on the prior art under the assumption that it is a process claim and that

there is a process step such as "providing a multiport switch containing ports" incorporated into the claim.

As per claim 20, Sun shows providing a multi-port switch containing a plurality of ports; and a port assignment process for assigning at least one port of said multi-port switch to one of a plurality of domains (figs. 3-8 and pages 2-3 as noted above). Sun shows all of the elements recited in claim 20.

As for claim 21, the argument for claim 20 applies. Sun also shows a transaction routing process for routing domain-specific transactions received by said multi-port switch to one or more ports assigned to the specified domain (pp.2-3 and 5). Sun shows all of the elements recited in claim 21.

As per claim 22, Sun shows a computer program product residing on a computer readable medium having a plurality of instructions stored thereon which, when executed by the processor, cause that processor to: assign at least a first port of a multi-port switch to a first domain; and route transactions, which are received by the multi-port switch and specify the first domain, to one or more ports assigned to the first domain (pp.2-3 and 5, wherein the computer system "architecture" of Sun uses software to control its functions and operation of the domains and can quickly adjust the membership in the domains based on conditions or requirements). Sun shows all of the elements recited in claim 22.

As for claim 23, the argument for claim 22 applies. Sun also shows that said computer readable medium is a read-only memory (inherent in a computer system like that of Sun in that the instructions for operating the system must be stored on a medium). Sun shows all of the elements recited in claim 23.

As for claim 24, the argument for claim 22 applies. Sun also shows that said computer readable medium is a hard disk drive (inherent in a computer system like that of Sun in that the

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instructions for operating the system must be stored on a medium such as a hard disk drive).

Sun shows all of the elements recited in claim 24.

As per claim 25, Sun shows a processor and memory configured to: assign at least a first port of a multi-port switch to a first domain; and route transactions, which are received by the multi-port switch and specify the first domain, to one or more ports assigned to the first domain (pages 2-3 and 5). Sun shows all of the elements recited in claim 25.

As for claim 26, the argument for claim 25 applies. Sun also shows that said processor and memory are incorporated into a network server (page 2). Sun shows all of the elements recited in claim 26.

As for claim 27, the argument for claim 25 applies. Sun also shows that said processor and memory are incorporated into a workstation (page 2). Sun shows all of the elements recited in claim 27.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al., U.S. Patent Application Publication No 2003/0005200 A1 in view of Sun (cited above).

8. As above it is noted that claim 28 was rejected based on indefiniteness under 35 USC § 112, it is still being rejected based on the prior art under the assumption that it is an apparatus claim and that the "process" elements are means for performing the process steps.

As per claim 28, Kumar et al. (Kumar) shows a multi-port switch containing a plurality of ports (275); a IO hub controller connected to one of said ports (280); a scalable node controller (120) connected to one of said ports; at least one microprocessor (127) connected to said scalable node controller. Kumar does not specifically show a first domain port assignment means for assigning at least a first port of said multi-port switch to a first domain; and a first domain transaction routing means for routing transactions, which are received by said multi-port switch and specify the first domain, to one or more ports assigned to the first domain. However, as noted above Sun does show a first domain port assignment means for assigning at least a first port of said multi-port switch to a first domain; and a first domain transaction routing means for routing transactions, which are received by said multi-port switch and specify the first domain, to one or more ports assigned to the first domain (pp. 2-3 and 5). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the domain partitioning of Sun in the system of Kumar in order to isolate the elements of the computer system into independent units so that if any particular domain encounters errors or problems the rest of the system can still operate with not difficulty (as noted on page 2 of Sun).

As for claim 29, the argument for claim 28 applies. Sun also shows a second domain port assignment means for assigning at least a second port of said multi-port switch to a second domain (pp. 2-3 and 5).

As for claim 30, the argument for claim 29 applies. Sun also shows a second domain transaction routing means for routing transactions, which are received by said multi-port switch and specify the second domain, to one or more ports assigned to the second domain (pp. 2-3 and 5).

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The other cited references also show domain partitioning systems.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn A. Auve whose telephone number is (703) 305-9638. The examiner can normally be reached on M-Th 8:00 AM-5:30 PM, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn A. Auve
Primary Examiner
Art Unit 2111

gaa
July 9, 2004